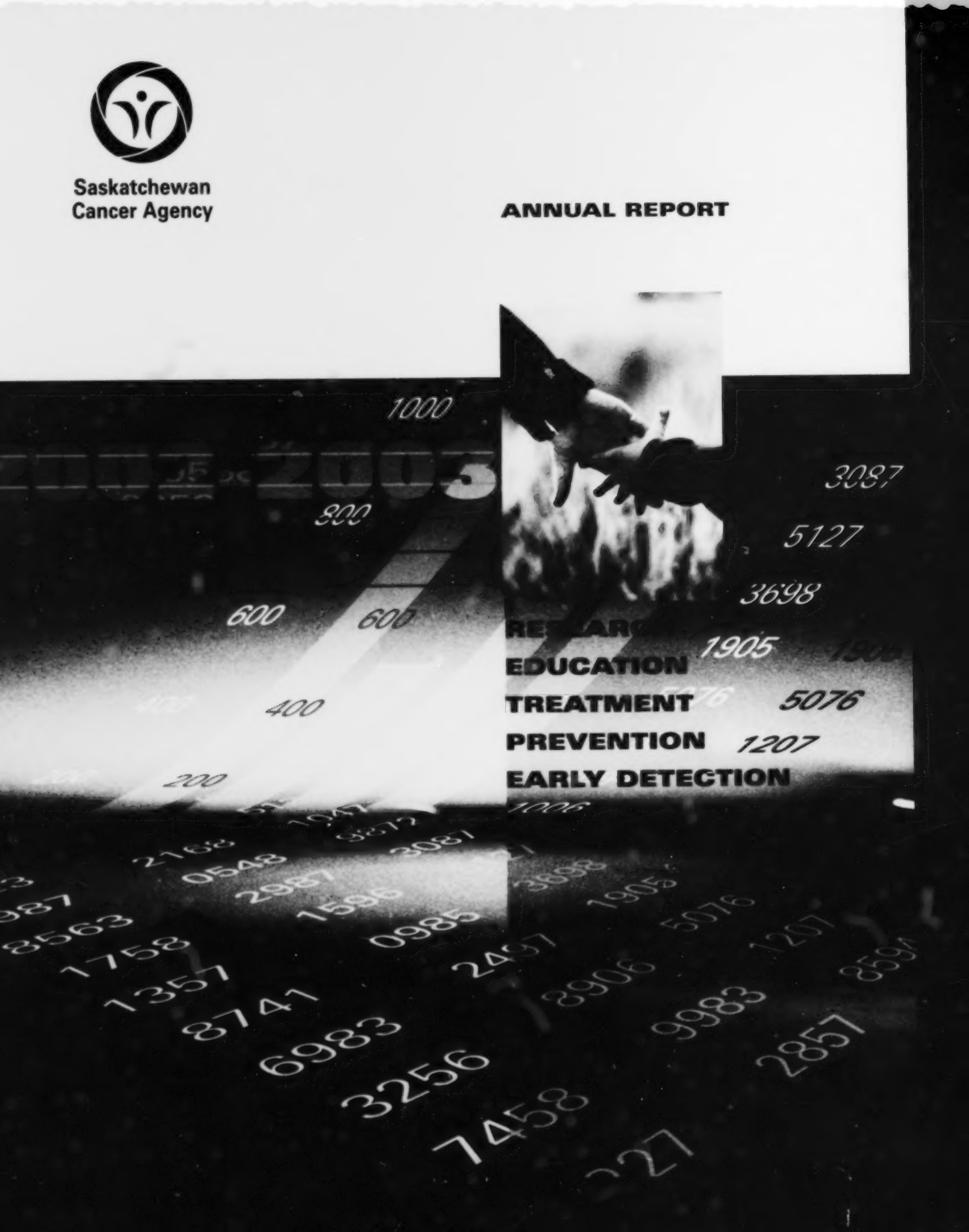
Saskatchewan
Cancer Agency

ANNUAL REPORT



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GOVERNANCE

The Saskatchewan Cancer Agency is guided by the mandate set out in *The Cancer Foundation Act* and is committed to the provision of quality care and cancer control for the province of Saskatchewan. Services are provided through several divisions: Allan Blair Cancer Centre (Regina), Saskatoon Cancer Centre, Health Research (Saskatoon), Prevention & Early Detection, Information Management, Education & Corporate Affairs, Human Resources and Finance. Within these divisions are over 40 departments in total with approximately 330 employees.

The Agency's goal is to reduce cancer incidence, morbidity and mortality through research, education, prevention and early detection, treatment and supportive care.

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MISSION

To deliver effective and sustainable research, education, prevention, early detection, treatment, and supportive care programs for the control of cancer in Saskatchewan.

VISION

Excellence in patient care and cancer control.

VALUES [1]

Patient/family-driven focus - We strive to understand the needs of those we serve and to continuously improve our processes in response to those needs.

Holistic focus - We focus on the whole person addressing their physical, emotional, mental, social, spiritual and intellectual aspects of being.

Respect for people - We treat all people with respect and give them the opportunity to be involved. This applies to patients, staff, clients, the general public and our colleagues in the cancer control field.

Openness and trust - We listen and learn from each other in an open and trusting manner. We share information and knowledge with patients, clients, staff, the public and our colleagues.

Interdisciplinary approach - We focus on achieving our mission and vision by examining all points of view and welcoming all contributions of knowledge and insight.

Continuous learning and improvement - We continuously work to improve on everything we do and to deepen our understanding of our work and the conditions that affect it.

Collegiality and teamwork - We foster institutional pride and commitment, recognizing the contribution of our colleagues throughout the Agency. Our staff enjoy a working environment that is motivating, rewarding, collegial and characterized by teamwork.

Support for individual development - We evaluate what we do, focusing on outcomes and data-driven continuous improvement.

A spirit of inquiry - We value creativity, innovation, adaptability and critical inquiry because continuous improvement, a rewarding work environment, breakthrough in research and quality care depends on them.

Maintain a balance - We are committed to an effective balance between service, workload, academic activity and a commitment to the equitable distribution of resources.

Effective planning - We are committed to effective planning for the system as a whole and to effective decisions regarding the planning of the use of resources for our programs and services.

Collaboration with partners - We commit to working effectively with our partners provincially, nationally and internationally to achieve our mutual goals.

[1] These values were adapted from the values articulated by the BC Cancer Agency based on a national framework.

BOARD OF DIRECTORS

Gary Semenchuck (Chairperson)	Regina	Dr. William Albritton	Saskatoon
Audrey Ahenakew	Saskatoon	Dr. Fred Morris	Moose Jaw
Carol Beck	Prince Albert	Diana Ermel	Regina
Mary Gilliland	Saskatoon	Marion Heavin	Melfort
Dolores Herring	Weyburn	Don Leitch	Unity

(as of March 31, 2003)

Standing from left to right are Gary Semenchuck, Diana Ermel, Dolores Herring, Dr. Fred Morris, Audrey Ahenakew and Carol Beck. Seated from left to right are Marion Heavin, Mary Gilliland and Don Leitch. Missing from the photo is Dr. William Albritton

MANAGEMENT COORDINATING COMMITTEE

Bob Allen	Chief Executive Officer	Dr. David Popkin	Executive Director Saskatoon Cancer Centre
Dennis Karakochuk	Executive Director Human Resources	Ivan Olfert	Associate Executive Director Saskatoon Cancer Centre
Judy Nurse	Executive Director Education & Corporate Affairs	Dr. Svein Carlsen	Executive Director Health Research
Dr. Ten Suan Goh	Executive Director Allan Blair Cancer Centre	Bill Morton	Executive Director Information Management
Huguette Gauthier	Associate Executive Director Allan Blair Cancer Centre	Kevin Lacey	Executive Director Finance
Lois Harrison	Executive Director Prevention & Early Detection		

(as of March 31, 2003)

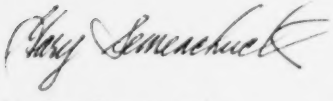
LETTER OF TRANSMITTAL

The Honourable John T. Nilson, Q.C.
Minister of Health
Province of Saskatchewan
Legislative Building
Regina, Saskatchewan
S4S 0B3

Dear Mr. Nilson:

As the Chairperson of the Saskatchewan Cancer Agency Board of Directors, I have the honour to submit herewith the report of the activities of the Saskatchewan Cancer Agency for the fiscal year ending March 31, 2003.

Respectfully submitted,



Mr. Gary Semenchuck
Chairperson

REPORT OF THE CHAIRPERSON AND CHIEF EXECUTIVE OFFICER

It is our pleasure to provide the following report of activities for the Saskatchewan Cancer Agency during the 2002-03 fiscal year.

Strategic Planning

Cancer is a life threatening and high profile disease given its huge impact on individuals and their families. Therefore, quality prevention, screening and treatment programs are of utmost importance to the people of Saskatchewan. The Agency, like many health organizations, is facing challenges with the rising incidence and prevalence of cancer, an aging population, aging infrastructure and equipment, health personnel shortages and increasing costs.

Consequently, the Agency embarked on a formal strategic planning process that included meetings with partners, cancer patients, the Board and staff. Our new strategic plan, entitled *A Proud History—A Planned Future*, is a realistic and forward-looking plan that will guide decisions and strengthen our organization. As a result, the strategic plan contains a broad spectrum of ideas about the Agency's challenges and opportunities, and concrete suggestions for addressing them.

In assessing the Agency's Mission, Vision and Values, external challenges, strengths and areas for improvement, eight strategic directions were identified to optimize the effectiveness of our cancer control program. In determining the strategic directions, the Action Plan for Saskatchewan Health Care and the Canadian Strategy for Cancer Control were considered to ensure that our directions and actions were aligned provincially and nationally. Our new Mission, Vision and Values are illustrated on page 2.

Our strategic directions identify the priority areas for the next five years and will be reported on beginning in next year's annual report. Our efforts will be focused on eight areas as we move forward towards our Vision—*Excellence in Patient Care and Cancer Control*. The strategic directions are considered equally and are not listed in order of priority.

- Treating cancer effectively
- Preventing and detecting cancer early
- Providing supportive care
- Supporting research
- Building infrastructure and organizational capacity
- Building a quality work environment
- Strengthening partnerships
- Committing to quality and accountability

Board Membership

The Board of Directors is comprised of members who come from diverse backgrounds and locations across the province. Members fill a three-year term on the Board. Terms ended in summer 2002 for Jean Perkins, Lena Dubray, Kathy Zaitsoff, Dr. Craig Milne and Dr. Charles Baker. Our former Board Chairperson, Pat Krueger, also ended her long tenure in 2002. Pat served as a Board member for twelve years and the last seven as Chairperson. Thank you to Pat and the other Board members for their outstanding service to the Agency.

It is also with great sadness we acknowledge the passing of Board member Dolores Tumbach from Leader, Saskatchewan. Our sincerest condolences to her family.

Medical Appointments
On recommendation of management, the Board approved the following medical appointments:

- **Allan Blair Cancer Centre**
  - Dr. Juan Pacella, Radiation Oncologist
  - Dr. Mohamed Akra, Radiation Oncologist
- **Saskatoon Cancer Centre**
  - Dr. Michael Voralia, Director of Malignant Hematology/Stem Cell Transplant Program
  - Dr. Wanda Hasegawa, Medical Oncologist/Hematologist
  - Dr. Deepu Mirchandani, Medical Oncologist
  - Dr. Sunil Yadav, Medical Oncologist

Strengthening Relationships with Saskatchewan Health and the Regional Health Authorities (RHAs)
Last year the following strategic planning bodies were created by Saskatchewan Health to further enhance cooperation, communication and collaboration on health issues resulting in a stronger provincial health network.

- **Minister's Forum**, represented by Board Chairs of the RHAs and the Agency, and chaired by the Minister of Health.
- **Leadership Council**, represented by CEOs of the RHAs and the Agency, and chaired by the Deputy Minister of Health.

These provide tremendous opportunities for Saskatchewan Health, the RHAs and the Agency to collaborate in planning and implementing a comprehensive cancer control program for our province.

Integration of Action Plan for Saskatchewan Health Care
In December 2001 Saskatchewan Health unveiled *Healthy People. A Healthy Province. The Action Plan for Saskatchewan Health Care.* The action plan is a blueprint for the future of health services in Saskatchewan. Emerging from the action plan were four long-term goals towards achieving a sustainable health system into the future. To this end, we would like to report on the Agency's progress under these four goals:

Goal One: Improved access to quality health services

- ***Long-term Capital Funding***
  Working with Saskatchewan Health, the Agency has been fortunate to receive capital equipment grants for the purpose of replacing aging treatment equipment. The Agency received a further $1.5 million from Saskatchewan Health for capital equipment and related renovations during fiscal year 2002-03, to be installed in 2003-04. This allows the Agency to provide the latest in cancer treatment options. Having state-of-the-art equipment also facilitates recruitment and retention of quality staff.

- ***Community Oncology Program of Saskatchewan (COPS)***
  COPS continues to expand with the volumes of chemotherapy drugs sent to communities almost tripling over the last two years. As the program grows, more resources will be needed for preparation, dispensing and communication of chemotherapy orders that are administered to patients in COPS centres in the regional health authorities.

Goal Two: Effective health promotion and disease prevention

- ***Prevention Program for Cervical Cancer***
  Cervical cancer is one of the most preventable cancers. In fact, up to 95% of all cervical cancer is preventable if women have regular Pap tests. Increased knowledge and comfort levels, through the combined efforts of health care providers and the Agency's Prevention Program for Cervical Cancer, will increase participation in regular Pap testing. The program is set to be fully operational in summer 2003.

Goal Three: Retain, recruit and train health providers

- ***Recruitment and Retention of Trained Specialists***
  The Agency continues to be affected by national and international shortages of cancer care specialists. The Agency spends considerable time and resources in recruiting specialists, particularly oncologists, from all corners of the world to ensure we have adequate numbers to provide quality services. We have eased some of the shortage in the area of radiation therapy by increasing enrollment of students in our School of Radiation Therapy, but with the addition of equipment, changing technology and temporary leaves, challenges remain. We have also put in place recruitment and retention initiatives of cancer care specialists in order to remain competitive.

- ***Staff Satisfaction Survey and Implementation of Findings***
  Staff satisfaction and working conditions are of paramount importance to the management and Board of the Agency. To address and subsequently improve upon any concerns, a satisfaction survey was developed by the Human Resources Quality of Work Life Committee of the Agency. A report of the findings was presented to staff, management and the Board in December 2001. Since that time, an action plan setting priorities and timelines for completion has been developed by management and their staff. Regular progress reports are published on the Agency's internal Web site. Surveys of this nature will be ongoing within the Agency occurring approximately every three to four years.

- ***Competitive Compensation***
  In April 1999 the Agency and the Saskatchewan Government Employees' Union agreed to work in partnership to develop and implement a gender-neutral, equal pay for work of equal value job evaluation plan. The job evaluation plan had to be consistent with the principles contained in the Government of Saskatchewan's Equal Pay for Work of Equal Value and Pay Equity - Policy Framework.

  In fall 2000 an internal steering committee consisting of in-scope and management staff was selected and trained to develop the job evaluation plan that reflected the needs, values and culture of the Agency. Over the last two and a half years the steering committee evaluated all in-scope jobs within the Agency. The steering committee was also charged with developing an appeal process and maintenance plan.

  The steering committee is in the process of completing the appeal process. The outcome of the appeal process may require some adjustments to the results and recommendations already provided to the negotiating committee who will negotiate wages.

Goal Four: A sustainable, efficient, accountable and quality health system

- ***Quality Indicator Program***
  Every program in the Agency measures and reports on at least two quality indicators as part of a commitment to continuous quality improvement. As a result, changes have been made to address the challenges identified, such as altering the work hours for those who monitor and maintain the radiation equipment so that there is less disruption to treatment.

  Quality improvement, monitoring and public reporting of outcomes will continue to take on increased importance in the future. Public expectation for greater accountability continues to rise. The Agency has taken a proactive approach to being more accountable for how we spend public health dollars and the effectiveness of our programs and services.

- ***Quality of Care Coordinator***
  The Agency's Quality of Care Coordinator ensures that patients are well informed of their rights and options, and assists them in resolving any specific concerns they may have about their treatment and the Agency's services. Patient concerns are kept strictly confidential. The Agency Board is informed, in general terms, of any concerns brought forward and of corrective action taken.

- ***Accreditation***
  The Agency successfully achieved its third accreditation from the Canadian Council of Health Services Accreditation (CCHSA) following a rigorous year of self-evaluation by 12 Agency teams and a week of site visits by surveyors. Accreditation is one of the most effective means by which the Agency can accurately assess its level of performance through peer review and self-evaluation, and focus on ways to improve care and quality of life of our patients based upon national standards.

- ***Patient Satisfaction Survey***
  To continue the Agency's ongoing commitment towards quality improvement, a sampling of patients treated at both cancer centres were invited to participate in a patient survey coordinated through the University of Saskatchewan, Department of Community Health and Epidemiology. The survey identified that patients, overall, were very satisfied with the quality of care received at the cancer centres. The survey also highlighted specific areas where we can improve services, including more information about our psychosocial oncology services, wait times for the first visit and while in the cancer centres, and continuity of care between the cancer centres and community services. A similar survey was conducted in 2000 and was used as a means of comparison and measurement of improvement to the 2002 survey.

- ***Integrated Information Management System***
  The Agency implemented year-two initiatives identified in its four-year Information Management Strategic Plan. Implementation of the strategy is a significant step in ensuring the long-term future and success of the Agency in providing timely and state-of-the-art cancer services for Saskatchewan residents.

  A new pharmacy system was successfully implemented in both the Allan Blair Cancer Centre and the Saskatoon Cancer Centre that supports more effective drug utilization and drug cost management. A new patient scheduling system was also implemented in both centres resulting in significant improvements in the effectiveness and efficiency of scheduling patient care.

  Continuous improvements have been made to the Agency's technology infrastructure with server, workstation, printer and network upgrades being completed. The Agency has subscribed to Help Desk services provided by the Saskatchewan Health Information Network (SHIN) to improve end-user support. Large numbers of staff received basic computer literacy training and training in office productivity tools (i.e. Word, Excel).

  The Agency is preparing for the acquisition of an integrated Clinical Management System (CMS) for installation in the Allan Blair Cancer Centre and the Saskatoon Cancer Centre over the next two to three years. The CMS, which encompasses an electronic patient record, will support effective and efficient delivery of treatment services by making information available to care providers when and where they need it.

- ***Saskatchewan Cancer Control Report***
  Earlier this year the Agency published Saskatchewan's first Cancer Control Report, which identifies our progress in managing cancer in the province. Please see page 17 of this report for additional information on the Cancer Control Report.

Canadian Strategy on Cancer Control

Last year we reported on the development of a national strategy for cancer control through the efforts of the Canadian Association of Provincial Cancer Agencies (CAPCA), the Canadian Cancer Society, the National Cancer Institute of Canada and all levels of government. We will recap the following priorities and report on their progress to date.

- **Development of standards and guidelines** - *establish mechanisms and improve capacity for collaborative guidelines and standards development*
  A national workshop on clinical practice guidelines for cancer care was held in fall 2002 in Ottawa. Since the national workshop, a clinical practice guidelines action group has been established and will report its findings in fall 2003. In Saskatchewan, work has been progressing in developing a comprehensive set of guidelines based on this national initiative.

- **Primary prevention** - *establish a national, provincial/territorial and municipal primary prevention system to address population-based risk factors for cancer and other chronic diseases by collaborating with chronic disease constituencies*
  A key decision coming out of an initial planning meeting in September was the need for the cancer prevention community to work closely with the Chronic Disease Prevention Alliance and at the same time to address risk factors unique to cancer, beginning with sun safety and environmental and occupational exposures. The Agency has begun a collaborative venture with a number of our partners to raise awareness among Saskatchewan residents about the role of healthy lifestyles in the prevention of cancer, along with diabetes, heart disease and other chronic conditions.

- **Rebalancing focus** - *improve resources and systems for delivery of supportive care/ rehabilitation and palliative care*
  One priority of the Strategy is the provision of community support in the areas of supportive, psychosocial and palliative care, which can only be achieved through an effective primary health care system that provides the support and expertise in the patient's community. The Agency has adopted the Canadian Association of Psychosocial Oncology standards of service in moving towards this priority.

- **Human resource planning** - *establish human resource planning database and coordinated approach to planning*
  Cancer programs and agencies across Canada have embarked on the creation of a pilot database and information system that can provide information and insight to cancer system planners to ensure that sufficient numbers of high quality cancer professionals are available to assess, treat and support the growing number of cancer patients in our communities.

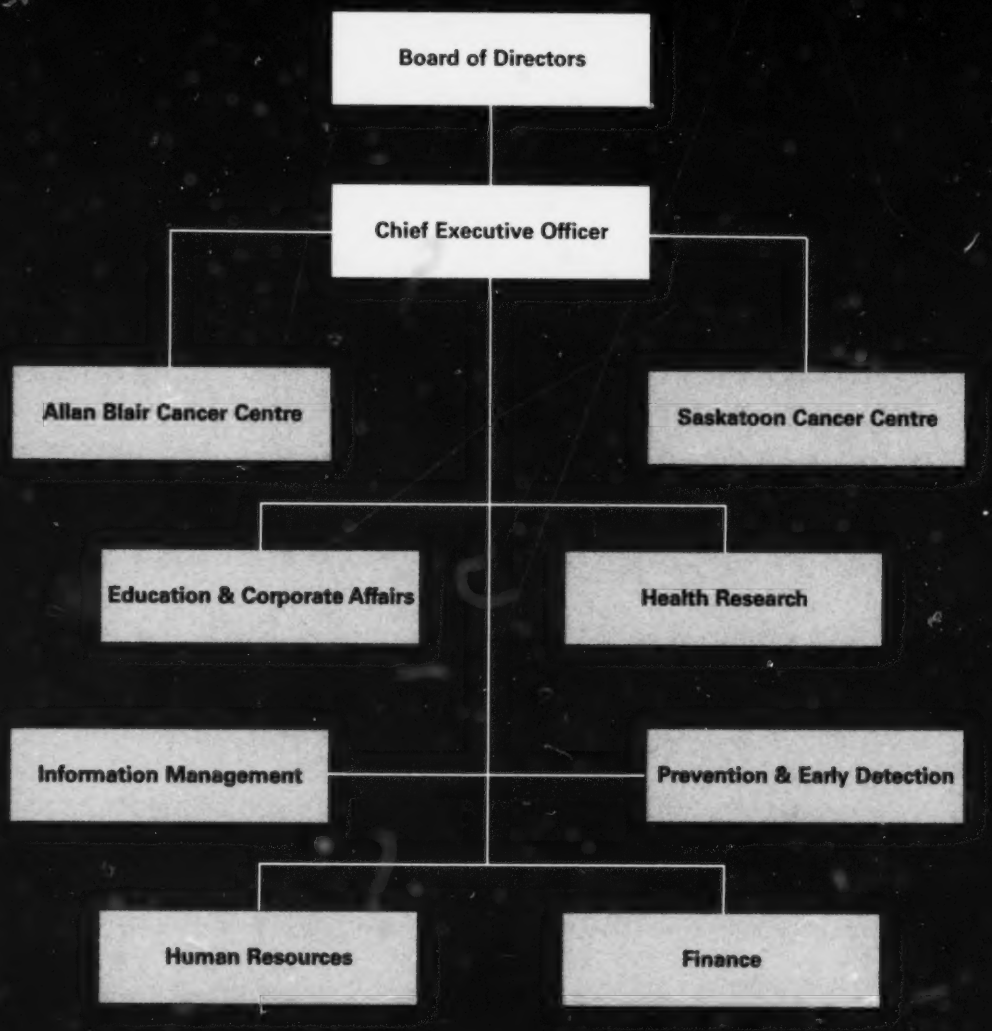
- **Research priorities** - *establish national priorities for strategic investments in cancer research*
  Based on the recommendations from the Strategy's research committee, a large working group was set up consisting of researchers, lay persons, survivors and funding partners (Canadian Institute of Health Research, National Cancer Institute of Canada, Canadian Association of Provincial Cancer Agencies and Health Canada), and determined the following top priorities: palliative and end-of-life care, molecular profiling of tumours, clinical trials, early detection of tumours, risk behaviour and prevention, and molecular and functional imaging. In Saskatchewan, the Agency, the University of Saskatchewan, the University of Regina, Canadian Cancer Society, Saskatchewan Health and the Health Services Utilization Research Commission have formed the Saskatchewan Cancer Research Network to foster a collaborative approach to cancer research in our province.

We would like to take this opportunity to thank the Board, management, staff and volunteers of the Agency for their continuous dedication and commitment to the Agency and to the people we serve. We would also like to thank our many partners, supporters and other health sector organizations that have contributed to our success over the past year.

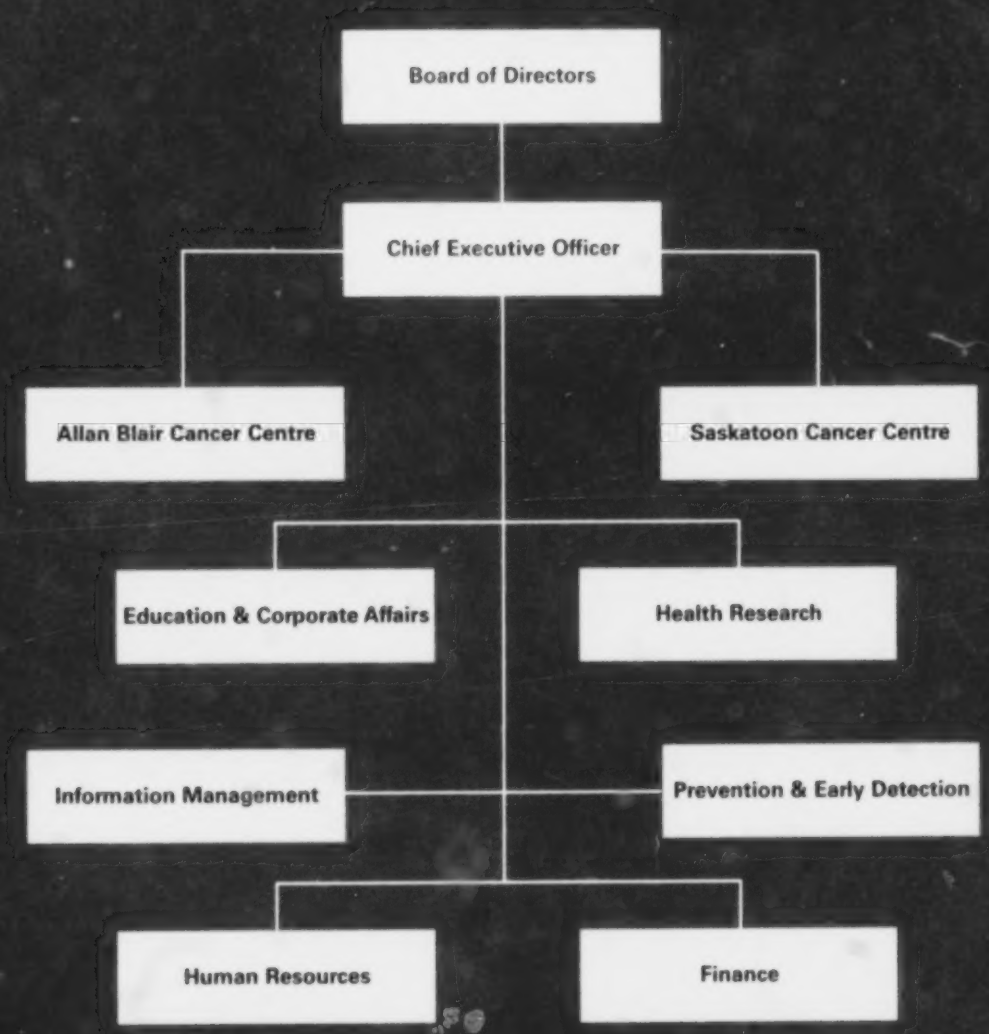
Gary Semenchuck
Chairperson

Bob Allen
Chief Executive Officer

ORGANIZATIONAL CHART



ORGANIZATIONAL CHART



AGENCY HIGHLIGHTS

Research
The Saskatchewan Cancer Agency is actively involved in basic science, translational, clinical trials and epidemiological research.

Basic Science
The Cancer Research Unit of the Agency conducts research in the area of basic science, which is laboratory research looking at cancerous cells.

Translational Research
The Cancer Research Unit has also developed a strong multidisciplinary translational group in leukemia research that centres on functional genomics and proteomics analysis of patients on clinical trials.

See pages 37 to 39 for a complete listing of research projects.

Clinical Trials
Clinical trials compares new therapies to already existing treatment methods. Oncologists at both cancer centres are involved in multicentred clinical trials research. Participation in this type of research ensures that the treatment patients are offered is state-of-the-art.

See clinical trials involvement details on page 40.

Felecia Watson, Research Officer, Program Evaluation & Surveillance

Epidemiology
Epidemiological research (population-based evaluation and surveillance) is conducted by the Program Evaluation and Surveillance Department of the Agency. As the name indicates, the department has two primary functions: evaluation and surveillance.

The department fosters an environment of quality improvement through the support of evaluation and related activities within the Agency. It provides assistance to other departments or divisions by developing evaluation work plans, designing data collection tools such as surveys, analyzing data and writing reports. It may also initiate evaluations as part of ongoing research and surveillance activities or take the lead in evaluations.

The department has been involved in various evaluation projects, including a comprehensive evaluation of the Community Oncology Program of Saskatchewan and the development of various surveys. It is currently working with Psychosocial Oncology to review the process of assessing patient needs throughout the course of treatment. It also assists with the evaluation of the Screening Program for Breast Cancer through the provision of indicator information and compilation of quality assurance data.

Another important area is monitoring and providing information about the incidence and trends of cancer in Saskatchewan, conducting clinic-based studies, investigating outcomes in patients and preparing grant applications in cooperation with oncologists. It is currently involved in a large number of studies involving cancers of the prostate, thyroid, endometrium, cervix, and colon. As well, it is involved in national and international studies that investigate the occurrence and outcome of cancer.

Education
The Education Department supports the development of cancer information and education for patients, the public, Agency staff and other health professionals in collaboration with the Agency's partners. The department joined national organizations such as the Chronic Disease Alliance and the Canadian Cancer Patient Education Network to support cancer control initiatives, and has started working on a number of educational activities outlined in the Agency's strategic plan to provide cancer education within the cancer centres.

Prevention and Early Detection
The Prevention and Early Detection Division of the Agency is responsible for the operation and management of the Screening Program for Breast Cancer and the new Prevention Program for Cervical Cancer.

Screening Program for Breast Cancer
The Screening Program for Breast Cancer (SPBC) was introduced in Saskatchewan in 1990 and sees the highest participation rate in Canada. Each year SPBC provides mammograms to between 36,000-40,000 women. SPBC screens women aged 50 to 69 years who are not on active follow-up for breast cancer.

SPBC has two permanent sites (Regina and Saskatoon); five regional sites (Yorkton, Moose Jaw, Swift Current, North Battleford and Prince Albert); and a mobile unit that travels to rural and remote areas of the province on a two-year cycle.

Since the first mammogram X-ray in 1990, approximately 100,000 X-rays have been taken inside the SPBC mobile. It has provided accessible breast cancer screening services for women in rural and remote areas of the province and, for the most part, within a 100-kilometre radius of their homes.

Screening Program for Breast Cancer Statistics 1998-2002

Centre

	1998	1999	2000	2001	2002
Regina -					
# of mammograms	8,148	9,405	9,387	9,545	9,000
# of abnormals	637	707	699	662	688
# of cancers	42	58	49	51	33
Saskatoon -					
# of mammograms	6,688	7,068	7,333	7,137	6,878
# of abnormals	535	605	662	619	622
# of cancers	32	35	45	46	43
Swift Current -					
# of mammograms	1,189	1,445	1,349	1,424	1,449
# of abnormals	86	108	92	83	93
# of cancers	5	9	4	5	8
North Battleford -					
# of mammograms	1,351	1,530	1,654	1,537	1,626
# of abnormals	96	132	153	147	140
# of cancers	6	8	10	17	9
Yorkton -					
# of mammograms	2,780	2,741	2,767	2,783	2,360
# of abnormals	194	208	200	198	149
# of cancers	6	12	11	13	11
Moose Jaw -					
# of mammograms	1,787	1,581	2,020	1,886	1,914
# of abnormals	141	141	143	148	136
# of cancers	12	7	15	13	15
Prince Albert -					
# of mammograms	2,037	2,220	2,548	2,427	2,477
# of abnormals	172	196	247	222	244
# of cancers	9	8	11	17	17
Mobile -					
# of mammograms	8,074	9,174	8,312	9,549	8,760
# of abnormals	735	646	602	608	672
# of cancers	41	50	41	44	39
Total -					
# of mammograms	32,054	35,164	35,370	36,288	34,464
# of abnormals	2,596	2,743	2,798	2,687	2,744
# of cancers	153	187	186	206	175

Pat Morrissette, Admitting/Reception, Screening Program for Breast Cancer

Prevention Program for Cervical Cancer

The Prevention Program for Cervical Cancer was announced in early 2002 by the Agency. This program will educate women and health care providers about regular Pap tests and send notification letters to women when overdue for their tests. Follow-up of non-normal results is also a fundamental component of this population-based program.

RESEARCH PROJECTS

Saskatchewan Cancer Agency Grants (2002-2003)

The Saskatchewan Cancer Agency provided $431,123 in grant money towards the following research projects:

The role of p85 in PDGF receptor down-regulation - Dr. D. Anderson
High level expression of growth factor receptors contribute to the aggressive growth properties of many human cancers. Defects in the receptor down-regulation pathway, responsible for degrading these activated receptors, have been suggested as a possible mechanism giving rise to the elevated growth factor receptor expression. Results from this study may contribute much needed information about the process of receptor down-regulation and may provide the basic understanding required to develop new treatments aimed at reducing receptor expression levels.

Research scientist, Dr. Deborah Anderson (front row, centre), and her team of research technicians and graduate students.

SRC signaling in colon cancer: A genomic and proteomic based feasibility study - Dr. K. Bonham
It is generally accepted that activation or over-expression of c-Src is a contributing factor in the development of several human cancers. The overall long-term goal of this program is to identify genes, which are regulated in a c-Src dependent fashion and thus may be important in the development and progression of colon cancer. To accomplish this, DNA microarray technology will be used to identify changes in gene expression profiles in a human colon cancer tissue culture system.

Generation of tumor-specific T cells by cross-priming of human dendritic cells with phagocytosis of apoptotic breast cancer cells - Dr. J. Xiang
HER2/neu is a human breast cancer marker which can trigger anti-HER2/neu immune responses. This study will look at ways of stimulating dendritic T cells to induce HER2/neu-specific immune responses. The result of these studies will result in new strategies in dendritic cell-based vaccines for the treatment of breast cancer.

Characterization of the metastatic phenotype in breast cancer - Dr. S. Carlsen
This project involves delineating some of the unique properties of breast cancer cells capable of metastasis. Using a rat breast tumour model system, we have identified a series of genes whose expression is specifically turned off in highly metastatic cells. We have isolated both the rat and human homologues of these genes and are currently investigating the function of these genes. Preliminary evidence suggests that one of these genes is involved in the regulation of expression of other genes, while the other is involved in the regulation of formation of cell surface carbohydrate structures. This research will hopefully provide new information about what causes cancer cells to metastasize.

Effect of prognostic factors and adjuvant chemotherapy on Dukes' stage B2 colon cancer in Saskatchewan, 1989-1998 - Dr. M. Hussain
This study will investigate the survival of patients with B2 colon cancer in Saskatchewan from the years 1989-1998. Survival comparisons between patients treated with and without chemotherapy will be evaluated while controlling for other significant prognostic factors. If high-risk subgroups of patients are identified with improved survival using chemotherapy, the information could be very helpful for altering current treatment practices.

A review and comparison of various treatment techniques and outcomes for carcinoma of the cervix in Saskatchewan, 1987-1999 - Dr. A. Mahmud (Co-investigator: J. Tonita)
Since 1994 a high dose rate remote afterloading unit has been employed for the treatment of carcinoma of the cervix. This retrospective study involves determining the effect that switching to high dose rate brachytherapy has had on the outcome of our treatment of carcinoma of the cervix.

Prostate cancer in Saskatchewan 1995-99: tumour characteristics, treatment and outcome - Dr. Skarsgard (Co-investigator: J. Tonita)
This project involves undertaking a large population-based study of prostate cancer in Saskatchewan, with the following aims: i) to retrospectively determine stage, tumour grade, pre-treatment PSA level, and treatment, for all patients diagnosed with prostate cancer in Saskatchewan from 1985-99; ii) to describe changes in the tumour characteristics and treatment with the advent of PSA testing; iii) to describe the outcome of subgroups of patients, based on age, tumour characteristics and treatment; iv) to retrospectively enhance the contents of the Saskatchewan Cancer Registry with tumour and treatment information, during a time period that is critical to understanding the critical usefulness of PSA testing; v) to pave the way for prospective collection of similar data for newly diagnosed patients with prostate and other cancers.

Lognormal modelling for breast cancer patients using short-term follow-up data to estimate long-term survival probability - Dr. P. Tai (Co-investigator: J. Tonita)
The research proposed is devoted to the investigation of applicability of the Lognormal Model for the analysis of breast cancer data. Prospective trials tend to take a long time to complete and are more expensive to run than retrospective trials. This study will determine if long-term survival rates can be predicted earlier using the Lognormal Model. The ability to predict the results of prospective trials earlier will greatly facilitate these studies.

External Grants (2002-2003)

Last year the Cancer Research Unit brought in over $1.1 million towards the following research projects:

The Role of A-Raf in Signaling Pathways - Dr. D Anderson
Funded by Canadian Institute of Health Research (CIHR) Regional Partnership Program

Effects of A-Raf-encoded PLD activity on cell signaling pathways - Dr. D. Anderson
Funded by a Dr. L. Schulman Medical Research Award

SRC transcriptional regulation and differential promoter utilization - Dr. K. Bonham
Funded by the CIHR

Leukemia Functional Genomics Centre - Dr. J. DeCoteau (Co-investigators:Drs. K. Bonham, W. Xiao, T. Kusalik, C. Gutwin, R. van der Jagt and D. Sheridan)
Funded by a Canada Foundation for Innovation Infrastructure Grant (Innovation Fund)

Genomic-Scale RNA Expression Profiling in Human Acute Myeloid Leukemia (AML) - Dr. J. DeCoteau
Funded by a Health Services Utilization and Research Commission (HSURC) Strategic Development Grant

N-myristoyltransferase activity and expression I oral and maxillofacial carcinomas - Drs R. Sharma and M.A. Copete
Funded by the Head and Neck Cancer Foundation

Calmodulin-Regulated Proteins in Heart - Dr. R. Sharma
Funded by the Heart and Stroke Foundation of Saskatchewan

N-myristoyltransferase: A Novel Molecular Target for Cancer - Dr. R. Sharma
Funded by the CIHR

Impact of determining the free PSA ratio using reflex testing in Saskatchewan - J. Tonita (Co-investigators: R. Alvi and Dr. K. Visvanathan)
Funded by HSURC

Reprogramming the antitumour immune responses. Converting immune tolerance and enhanced CTL infiltration by cytokine/chemokine gene transfer - *Dr. J. Xiang*
Funded by the CIHR Regional Partnership Program

Conformationally constrained loop peptides with binding affinity for tumor-specific TAG72 epitope - Dr. J. Xiang
Funded by the Natural Sciences and Engineering Research Council (NSERC)

Engineering of antibody affinity and immunogenicity under the guidance of a computational model of B72.3/TAG72 complex - Dr. J. Xiang
Funded by NSERC

Study of importance of cognate tumour-specific T helper epitopes in DC vaccine - Dr. J. Xiang
Funded by a Dr. L. Schulman Medical Research Award

CLINICAL TRIALS

Clinical Trials (2002-2003)

Participation in Clinical Trials of the North Central Cancer Treatment Group (NCCTG), National Cancer Institute of Canada (NCIC) Clinical Trials, National Surgical Adjuvant Breast and Bowel Project (NSABP), and Drug Company Studies
The Allan Blair Cancer Centre Protocol Office and the Saskatoon Cancer Centre Clinical Trials Office accrued a total of 90 patients in clinical trials. The Allan Blair Protocol Office was following 463 patients in 83 different studies and had 49 active clinical trials. The Saskatoon Cancer Centre was following 451 patients in 66 different studies and had 30 active clinical trials.

Participation in Children's Oncology Group (COG) - Regina
Twenty patients were registered with COG. Of these patients, five patients were enrolled in both therapeutic and biology studies. The remaining 14 patients were registered with COG and given standard treatment. Eight new COG protocols were approved. Sixty-nine protocols received annual re-approval and 40 addenda were also approved.

Participation in Children's Oncology Group (COG) - Saskatoon
Fifteen new pediatric patients were seen. Of these new patients, two were enrolled on therapeutic and biology studies. The remaining 13 patients were registered with COG and given standard treatment. Four previously diagnosed patients were enrolled onto late effects studies and one previously diagnosed patient was enrolled on to an epidemiology study. Four new studies were approved. Fifty-two protocols received annual reapproval and 41amendments were also approved.

Participation in Radiation Therapy Oncology Group (RTOG) - Saskatoon
Nine new patients were accrued to RTOG clinical trials. There were 8 studies open and accruing patients, and 11 studies open for follow-up in Saskatoon. Follow-up data is being collected on 62 patients who have completed treatment.

Radiation Treatment Oncology Group (RTOG) - Regina
Eight new patients were enrolled to RTOG clinical trials. There were 6 studies open to accrual and 20 patients in post treatment follow-up in Regina.

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ABSTRACTS, PROCEEDINGS AND PRESENTATIONS

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Tonita J, **Skarsgard D**, **Alvi R**, **Tai P**, Visvanathan K. Cancer Research Day, Steering Committee on Cancer Control Research in Saskatchewan, Saskatoon, Nov 2002: Case mix and treatment of prostate cancer in Saskatchewan, before and during the PSA era. [poster presentation]

Tai P, **Tonita J**, **Skarsgard D**. American Society for Therapeutic Radiology and Oncology Meeting, New Orleans, USA, 2002: A 20-year follow-up study of the long-term survival rate of limited stage small cell lung cancer patients. [poster presentation]

Tai P, **Tonita J**, Yu E, **Skarsgard D**. San Antonio Breast Cancer Symposium, San Antonio, USA, Dec 2002: Application of the lognormal model for prediction of long-term survival rates from short-term follow-up data in stages III and IV breast cancer. [poster presentation]

Tai P, **Tonita J**, Yu E, **Skarsgard D**. Annual Scientific Meeting of Clinical Oncological Society of Australia (COSA) & 2nd Sino-Australian-New Zealand Conference on Surgical Oncology, Sydney, Australia, Nov 2002: Application of the lognormal model for prediction of long-term survival rates from short-term follow-up data in advanced breast cancer. [oral presentation]

Tai P, **Tonita J**, Yu E, **Skarsgard D**. Annual Scientific Meeting of Clinical Oncological Society of Australia (COSA) & 2nd Sino-Australian-New Zealand Conference on Surgical Oncology, Sydney, Australia, Nov 2002: Verification of lognormality of survival time for 42 cancer sites in the SEER database and early estimation of their statistical cure rates. [poster presentation]

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Tonita J, **Skarsgard D**, **Alvi R**, **Tai P**, Visvanathan K. Case mix and treatment of prostate cancer in Saskatchewan, before and during the PSA era. Cancer Research Day, Steering Committee on Cancer Control Research in Saskatchewan, Saskatoon, Nov 29, 2002.

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SYLVIA FEDORUK PRIZE IN MEDICAL PHYSICS

Dr. Sylvia O. Fedoruk, a Medical Physicist with 35 years of dedicated and distinguished service to the Saskatchewan cancer program, retired in December 1986. On the occasion of Dr. Fedoruk's retirement, the Board of the Saskatchewan Cancer Agency announced the establishment of the Sylvia Fedoruk Prize in Medical Physics in honour and in recognition of her contributions to cancer control.

This annual award is presented to the author selected as having published the best paper in Medical Physics in the preceding year and must relate to work carried out within a Canadian institution. An anonymous selection committee, appointed jointly by the Canadian College of Physicists in Medicine and the Canadian Organization of Medical Physics, reviews the entries and recommends the successful candidates.

The award for 2002 was presented to: *J.H. Siewerdsen, I.A. Cunningham and D.A. Jaffray*, co-authors of the article, "A framework for noise-power spectrum analysis of multidimensional images," published in **Medical Physics**.

Past winners include the following:

1992 *D.L.D. Mason, J.J. Battista, R.B. Barnett, A.T. Porter*, co-authors of the paper, "Ytterbium-169: calculated physical properties of a new radiation source for brachytherapy," published in **Medical Physics**.

1993 *John M. Sabol, Ian C. Soutar, Donald B. Plewes*, co-authors of the paper, "Mammographic scanning equalization radiograph," published in **Medical Physics**.

1994 *R.M. Henkelman, G.J. Stanisz, J.K. Kim, M.J. Bronskill*, co-authors of the paper, "Anistrophy of NMR properties of tissue," published in **Medical Physics**.

1995 *Wei Zhao, John Rowlands*, co-authors of the paper, "X-ray using amorphous selenium: Feasibility of a flat panel self-scanned detector for digital radiology," published in **Medical Physics**.

1996 *Chris Henry, Terry Peters*, co-authors of the paper, "Three-dimensional reconstruction of vascular trees: Theory and methodoloy," published in **Medical Physics**.

1997 *Corey Zankowski, Ervin Podgorsak*, co-authors of the paper, "Calibration of photon and electron beams with an extrapolation chamber," published in **Medical Physics**.

1998 *Robin Kelly, Kevin Jordan, Jerry Battista*, co-authors of the paper, "Optical CT Reconstruction of 3D Dose Distributions using the FBX Gel Dosimete," published in **Medical Physics**.

1999 *Pratondo Busono, Esam Hussein*, co-authors of the article, "Algorithms for density and composition-discrimination imaging for fourth-generation CT system," published in **Physics in Medicine and Biology**.

2000 *Martin Lachain, B. Gino Fallone*, co-authors of the article, "Monte Carlo Simulations of X-ray induced Recombination in Amorphous Selenium," published in **Journal of Physics D: Applied Physics**.

2001 *B.M.C. McCurdy, K. Luchka, and S.Pistorius*, co-authors of the paper, "Dosimetric investigation and portal dose image prediction using an amorphous silicon electronic portal imaging device," published in **Medical Physics**.

DONATIONS

Although the Saskatchewan Cancer Agency is funded by the Government of Saskatchewan through Saskatchewan Health, we also received $484,926 in generous donations to enhance our services and conduct research. We are pleased to extend a special thank you to individual donors and to recognize our major donors:

- Rawlco Radio for sponsoring the C95 Radio Marathon for breast cancer research
- Royal Bank Financial Group Foundation for purchasing new mammogram X-ray equipment for a new mobile mammogram unit
- Lisa Rendall Golf Tournament for supporting breast cancer research
- Keg Restaurant in Saskatoon for supporting breast cancer research
- Robert Mondavi Winery for supporting breast cancer research
- Golder Associates for a donation toward patient services
- Western Westlund for a donation toward patient services
- Regina Pats for a donation toward patient services
- Labatts for a donation toward patient services
- Next Communications for a donation toward patient services
- Corrections Canada for sponsoring Christmas hampers
- Printmaking and Ceramic students at the University of Regina for supporting leukemia research
- Shoppers Drug Mart for supporting the breast screening program
- Grand Chapter of the Order of the Eastern Star for supporting research

The 3rd Annual C95 Radio Marathon for breast cancer research, held in Saskatoon in fall 2002, was another huge success thanks to the generous support from the people of Saskatchewan.

INFORMATION

Public information available:

- Annual Report
- Saskatchewan Cancer Control Report: Profiling Trends in Cancer, 1970-2001
- Saskatchewan Cancer Agency brochures
- List of Payees

Saskatchewan Cancer Agency contact numbers:

Head Office (Regina) • 306-585-1831

Allan Blair Cancer Centre (Regina) • 306-766-2213

Regina Cancer Patient Lodge • 306-359-3166

Saskatoon Cancer Centre • 306-655-2662

Saskatoon Cancer Patient Lodge • 306-242-4852

Health Research (Saskatoon) • 306-655-2778

Prevention and Early Detection •
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